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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,282

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Rainer Papp

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EXAMINER

NOLAN, JASON MICHAEL

ART UNIT

PAPER NUMBER

1626

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/576,282	<b>Applicant(s)</b> PAPP ET AL.	
	<b>Examiner</b> JASON NOLAN	<b>Art Unit</b> 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 21 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office Action is responsive to Applicants Amendment – After Non-Final Rejection, filed 11/25/2008. Claims 1-14 & 16-22 are pending in the instant application; of which Claims 1, 9, 10, 12, 19, & 20 are currently amended and Claims 21 & 22 are new. Claim 15 is cancelled.

#### ***Response to Amendment***

Applicant's amendments with respect to Claims 1, 9, 10, 12, 19, & 20 have been fully considered and are entered. The 101/112 rejection of Claim 15 has been withdrawn per amendment. The objections to Claims 1, 12, & 18-20 are withdrawn per amendment.

#### ***Response to Arguments***

Applicant's arguments with respect to the 103 prior art rejection over the instant claims have been fully considered but they are not persuasive. Applicants state that the Office Action did not provide evidence for motivation or rationale to combine the references. Further, Applicants state that the instant specification, page 5, ll. 9-19, points out that the addition of a base provides additional stability to the hydroformylation catalyst and such stability is surprising because the ligands already contain basic nitrogen atoms. Additionally, Applicants distinguish the specific embodiments of the Leung reference.

In response, the Examiner points out that the Leung reference was a secondary reference in the rejection and used to supplement the teachings of the Ahlers' reference. The Ahlers' reference is indistinguishable from the instant application notwithstanding the instant application's inclusion of a base in the hydroformylation reaction. However, the Leung reference makes clear that the inclusion of a base stabilizes the metal organophosphite ligand complex catalyst against deactivation (column 52, ll 28-67). Taken as a whole the two prior art references encompass the claims of the instant application. An explicit suggestion or motivation to combine the references is not the standard. The "knowledge generally available to one of ordinary skill in the art" is sufficient as long as there is a reasonable expectation of success. See MPEP 2143. For these reasons, Applicant's argument is not persuasive and the rejection is maintained herein and made FINAL.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-14 & 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahlers *et al.* WO02/083695, published 10/24/2002, see IDS (for convenience, references are made to the English translation: US 7,173,138) in view of Leung *et al.* (US 5,731,472, see IDS).

1. *Determining the scope and contents of the prior art* - Ahlers *et al.* teaches the hydroformylation of compounds containing at least one ethylenically unsaturated double bond by reaction with carbon monoxide (CO) and hydrogen in the presence of a catalyst. Said catalyst preferably contains a phosphoramidite ligand (structures in Claims 9, 10, & 17) having a bridging group Q (structure in Claims 1 & 9). Claims 13-21 and Examples 1-37 (specification, columns 47-55) outline the synthesis, use, and

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stability of the phosphoramidite ligands. Leung *et al.* teaches that when the hydroformylation process is conducted in the presence of one or more nitrogen containing heterocycles the deactivation of the metal-organophosphorous ligand complex catalysts is lessened or prevented. In other words, the use of a base for the stabilization of the catalyst in a hydroformylation process is known (column 52, ll 28-67). The bases (or nitrogen containing heterocycles) disclosed in the '472 patent include diazoles, triazoles, diazines, triazines, and substituted derivatives thereof.

2. *Ascertaining the difference between the prior art and the claims at issue* - the difference between Ahlers *et al.* and the instant application is the use of a base for the stabilization of the hydroformylation catalyst. The difference between the prior art of Leung *et al.* and the instant application is the organophosphorous ligand. The prior art uses phosphite ligands and the instant application uses phosphoramidite ligands.

3. *Resolving the level of ordinary skill in the pertinent art* – the level of ordinary skill in the art may be found by inquiring into: (1) the type of problems encountered in the art; (2) prior art solutions to those problems; (3) the rapidity with which innovations are made; (4) the sophistication of the technology; and (5) the education level of active workers in the field. *Custom Accessories, Inc.*, 807 F.2d at 962. All of those factors may not be present in every case, and one or more of them may predominate. *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696 (Fed.Cir.1983). Based on the typical education level of active workers in the field of synthetic organic chemistry, as well as the high degree of sophistication required to solve problems encountered in the art, the Examiner finds that a person of ordinary skill in the art would have at least a college

degree in the field of organic chemistry and at least four years of work experience, i.e. a masters or doctorate level scientist.

4. *Considering objective evidence present in the application indicating obviousness or nonobviousness* – the instant specification, page 5, ll. 9-19, points out that the addition of a base provides additional stability to the hydroformylation catalyst and such stability is surprising because the ligands already contain basic nitrogen atoms. However, a finding that is surprising is not necessarily a patentable finding. In this case, the specification fails to demonstrate that the finding solves a problem or affords unexpected results. As such, in light of the Leung reference, the finding that a base stabilizes hydroformylation catalysts has been known in the art since at least 1998. For this reason, the instant application is an optimization of a catalytic hydroformylation process (specification, page 1, line 26). The optimization includes the use of phosphoramidite ligands in the presence of a base in the reaction mixture. The prior art as a whole suggests the instant claims because it collectively teaches the use of phosphoramidite ligands in a catalytic hydroformylation process and the use of a base to add stability for organophosphorous ligands. For this reason, a person having ordinary skill in the art of catalytic hydroformylation would have been aware of means for improving stabilizing the organophosphorous ligands with the use of a base, (specifically nitrogen containing heterocyclic bases). Therefore, the claims as a whole are obvious over the prior art because the optimization relies on known methods for improving the process.

***Claim Objections***

Claims 21 & 22 are objected to as being dependent upon a rejected base.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



***Telephone Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Nolan whose telephone number is (571) 272-4356 and e-mail is [Jason.Nolan@uspto.gov](mailto:Jason.Nolan@uspto.gov). The examiner can normally be reached on Mon - Fri (9:00 - 5:30PM). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph M<sup>c</sup>Kane can be reached on (571) 272-0699. The USPTO fax number for applications is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, (either Private PAIR or Public PAIR). Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. For questions on Private PAIR system, contact the Electronic Business Center at (866) 217-9197.

/Jason M. Nolan/

Examiner, Art Unit 1626

/Rebecca L Anderson/

Primary Examiner, Art Unit 1626